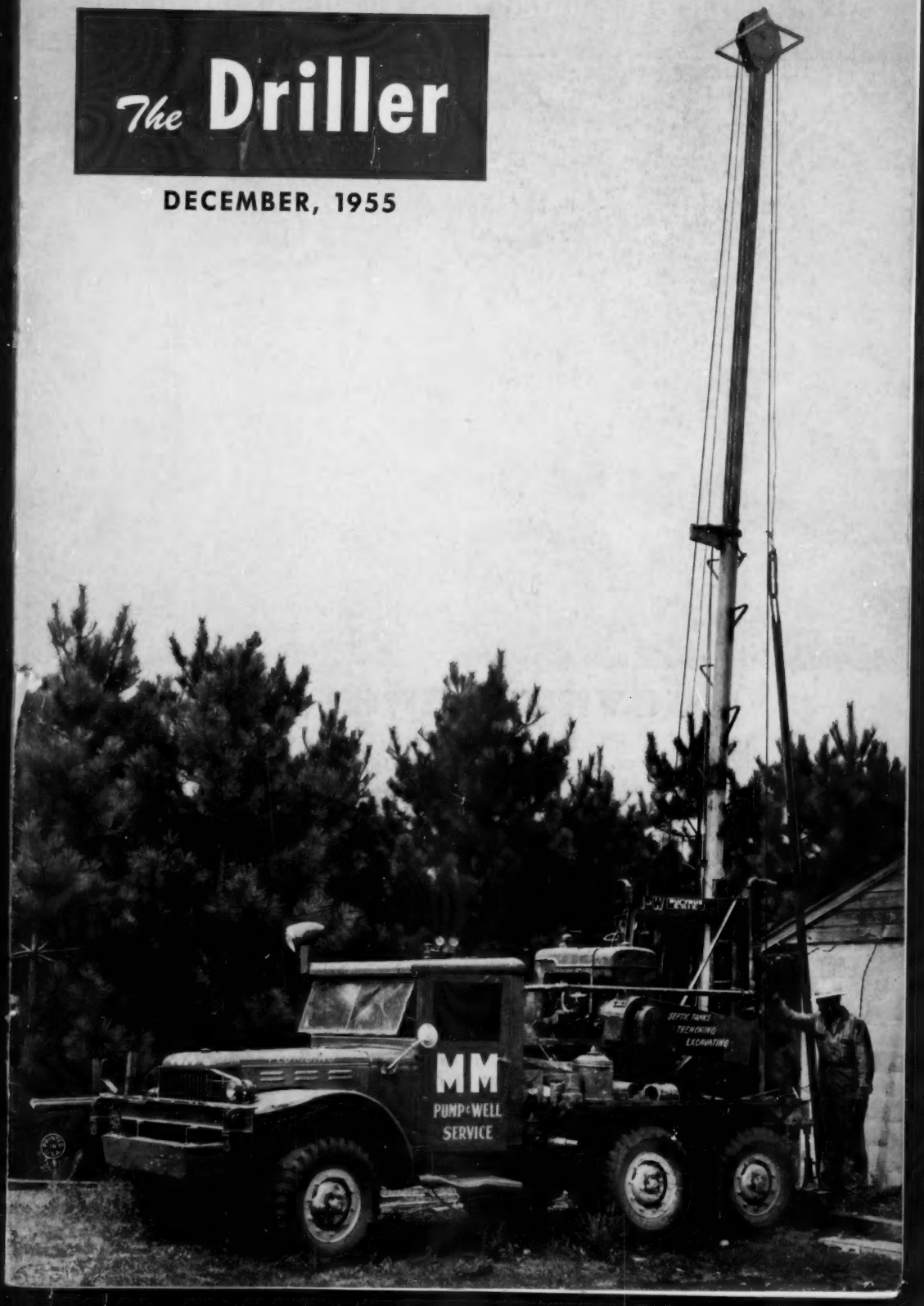
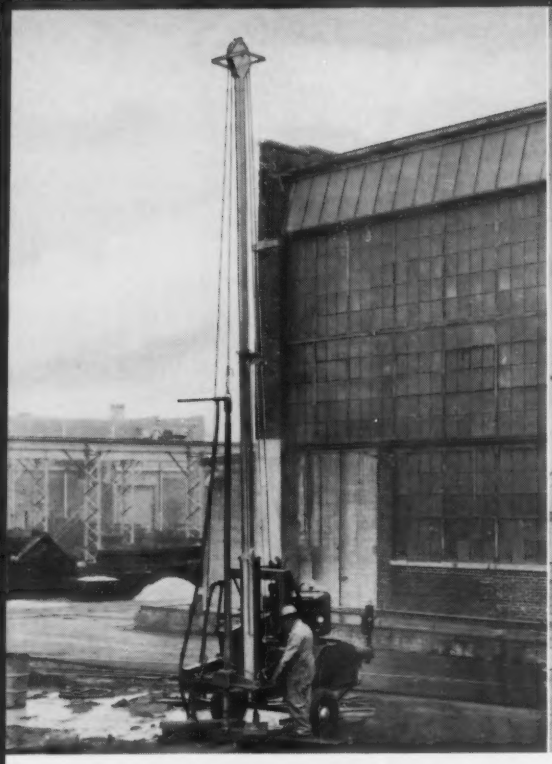
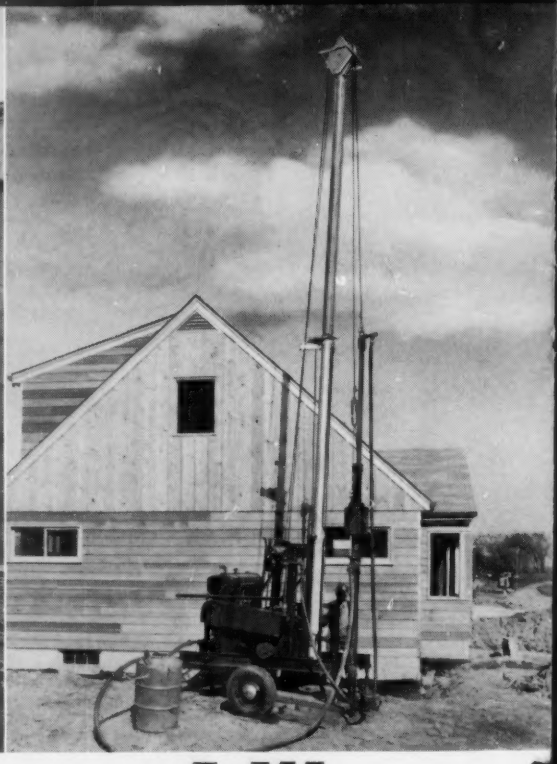
The Driller

DECEMBER, 1955



NEW WATER WELL DRILL PUTS EMPHASIS ON SPEED





BUCYRUS-ERIE 1-W

Speed and convenience are the keynote of the ultramodern 1-W. Small, simple, easy to move, it features quick convertibility for drilling by four different methods — jetting, hollow rod, cable tool, and rotary.

THERE'S SPEED IN TRAVEL with the two-wheel trailer mounting that hitches easily behind your tool truck. Overall length is less than 18 feet; net weight only 3,550 lbs. You can also mount the drill on any ¾ or 1-ton truck chassis.

THERE'S SPEED IN SET-UPS because you can raise and extend the derrick under power in less than a minute. The upper section is securely locked in place by a fool-proof chocking arrangement. No braces are required.

THERE'S SPEED IN DRILLING with bull reel and hammer reel under instantaneous friction clutch control. A smooth hydraulic spudding motion is provided for the hollow rod, jetting, or solid tools.

THERE'S SPEED IN CHANGING DRILLING METHODS because the 1-W is specially designed for quick conversion from hollow rod, jetting, cable tool or rotary.

The 1-W drills 2- to 4-in. wells. Depth capacity ranges from 200 to 250 feet, tool capacities from 150 to 930 pounds, depending on the method of drilling employed. For complete information, write today.

34W55C

BUCYRUS ERIE

South Milwaukee, Wisconsin

ONLY REDA SUBMERGIBLE PUMPS GIVE YOU THESE EXCLUSIVE ADVANTAGES

- ... The Original Submergible pump backed by 35 years of submergible pump and motor manufacturing experience and know-how.
- ... Patented 2-wire system cuts installation and maintenance costs and power bills.
- ... "E" type pump bearings insure greater resistance to abrasive damage and longer life.
- ... A complete line in sizes from 1/3 H.P. to 150 H.P. for 4", 6" and 8" wells.
- ... Liberal Warranty and 5 Year Exchange Plan.
- ... The finest and most efficient submergible motor sealed against entry of foreign material from the well and oil lubricated for life.

These extra advantages are *exclusive features* obtained *only* with Reda Submergible pumps. Reda manufactures the complete pumping unit, both motor and pump in its modern manufacturing plant at Bartlesville, Oklahoma. More than half of all submergible pumps sold are manufactured by Reda. These outstanding submergible pumps are tried and proved.

SUBMERGIBLE REDA PUMPS

Drillers — Dealers, increase your pump sales and handle this profit making line. Write TODAY for details.

HOME OFFICE

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PUMP COMPANY

BARTLESVILLE, OKLAHOMA

BRANCHES: Midland, Texas — San Antonio, Texas

New

Completely Automatic water system for farm homes!

Jacuzzi

DEEPRIME JET

Nothing else like it

for uninterrupted water service... low operating cost

It's the greatest advance in pump engineering since Jacuzzi invented jet pumps. It's designed for shallow or deep wells to 400 feet. Hundreds already in use.

New **Makes your well a satisfactory producer regardless of silt, gaseous water, low capacity or changing water levels.**

New **Eliminates all those common causes for breakdowns. Re-primes itself automatically after electric power failure. Shuts itself off whenever water level drops. Cuts power bills.**

New **Has all working parts above ground within easy reach. No motor or mechanism down in the well to clog with sand or burn out if your well gets pumped down.**

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Factory branches and authorized dealers nationwide.

The Driller

Vol. 29 No. 12

December 1955

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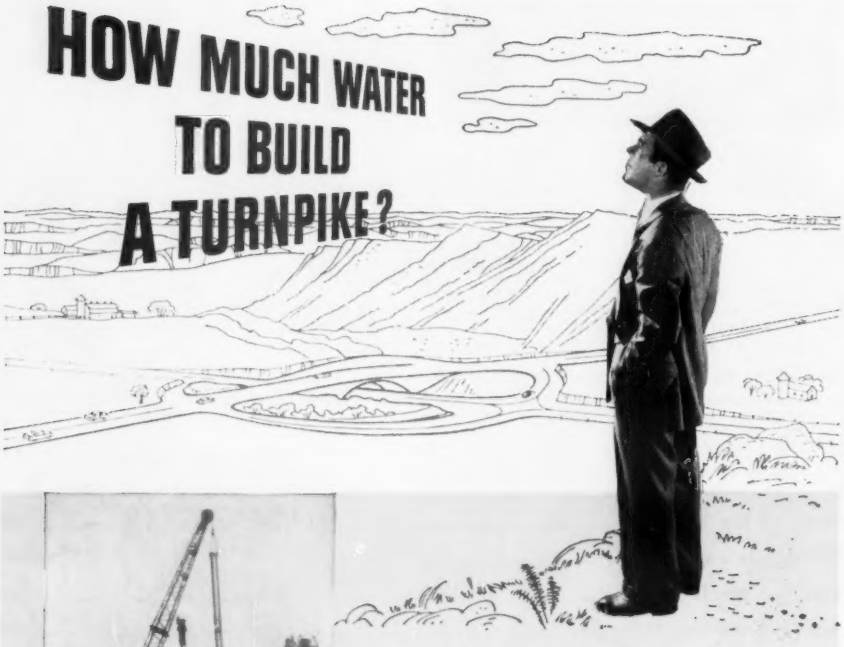
HOW MUCH WATER TO BUILD A TURNPIKE?



Cook well strainer being lowered into Michiana Turnpike Gravel Company's 205-foot well

It's hard to compute a total figure, but the Michiana Turnpike Gravel Company estimates nearly a million gallons a day will be needed just to wash gravel and mix concrete for the Michigan-Indiana Turnpike that will form another link in the coast-to-coast highway. It will take a dependable flow of water to keep a constant supply of clean gravel and fresh concrete pouring out steadily to construction sites, so a Cook well strainer was installed to guarantee high capacity output. Contractor W. E. Downer, Quincy, Mich., installed the 35-foot wire-wound iron strainer of 12-inch diameter. The top 20 feet of the strainer has a No. 70 slot, and the bottom 15 feet has a No. 50 slot. The well was tested at 1250 gpm with an 18-foot drawdown, but with a permanent pump it actually produces 2400 gpm with a 38-foot drawdown.

Cook Strainers have an exclusive V-shaped self-cleaning slot which eliminates clogging and insures maximum water delivery. Wire-wound or brass tube types are available in all slot sizes from .006 inches to .25 inches, made of Red Brass, American Everdur Bronze, Armco Iron or Stainless.

Eight to 24-hour delivery possible. Call Cincinnati MU-1800 for this service or write for specifications.

World's Leading Name In Well Strainers

COOK WELL STRAINER CO.

3264 BEEKMAN, CINCINNATI 23, OHIO

"Here's a gilt-edged introduction to the BIG Industrial Market for submersibles..."

"I'd like you to meet the powerful new high-capacity 6" and 8" SUMO pumps — especially developed to meet the large scale water requirements of commercial establishments and industrial plants. The motor is, of course, built by SUMO to insure a perfectly matched pump-motor combination. Bronze and stainless steel is used throughout — we really believe these pumps to be the finest industrial-sized submersibles on the market today."

Full details on these sensational new pumps are available in Bulletin B1000. Write for a copy. SUMO PUMPS INC., P. O. Box 983, Stamford, Conn., Dept. D.

BASIC SPECIFICATIONS

MODEL C53	100 gpm	6" wells
MODEL C7	130 "	6" wells
MODEL C8	180 "	6/8" wells
MODEL E	To 400 "	8" wells

Motor: 7½, 10, 15, 25 and 30 hp.

JOBBERS AND DEALERS — Franchises are still open in a few areas. Write for details.

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THE ONLY PUMP MANUFACTURER TO CONCENTRATE 100% ON SUBMERSIBLES FOR WATER WELLS

We can make such beautiful money together!

When you combine your skill in finding water for your customers with Goulds century of know-how in *pumping* that water, you've got a profitable combination that's hard to beat.

Every time you specify a Goulds Water System — it means another satisfied customer. Satisfied customers tell others — and you make *more* money.

In fact, we *both* make more money—because we intend to go on making Goulds the *most wanted* pumps. Goulds is the world's largest exclusive manufacturer of pumps — giving you more to sell, with models and sizes to fit every possible running water requirement! So see the complete Goulds line at your distributor or write: Dept. TD-1255.

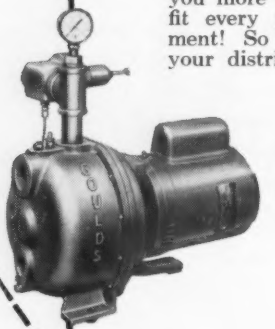


Fig. 3658 DEEP WELL JET . . . New, low cost, ½ and ¾ H.P. jet pumps for well depths to 150 ft. Famous Goulds features at a very popular price!

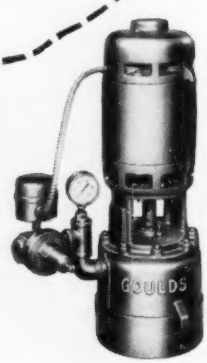
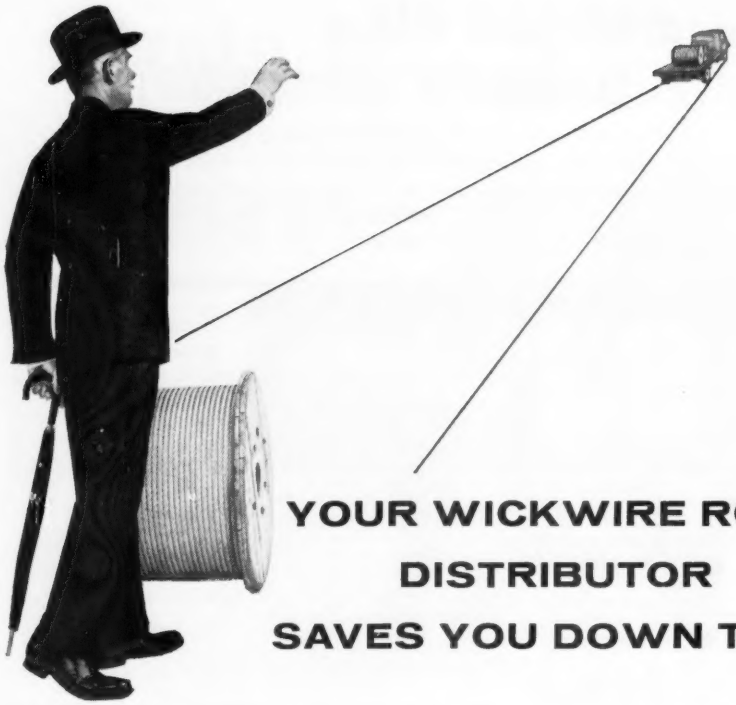


Fig. 3371 MULTI-STAGE JET For extra deep wells (to 200 ft.) where greater capacities and pressure are needed. Easy to install.

GOULDS
PUMPS, INC.
SENECA FALLS, NEW YORK



YOUR WICKWIRE ROPE DISTRIBUTOR SAVES YOU DOWN TIME

When the lack of the proper wire rope halts your production or your operations, thank your lucky stars that your helpful Wickwire distributor is only a quick phone call away. It's a wonderful feeling . . . to know you'll be getting exactly what you need from his warehouse stocks in only a few hours time.

Now contrast that with the cost in time, money and inconvenience of emergency shipments direct from a distant manufacturer.

In addition to saving on down time, your Wickwire distributor effects further economies by recommending the wire rope that will give you the longest service life, by minimizing your bookkeeping, inventory maintenance and transportation costs. He keeps your reserve stocks for you so that you don't tie up capital in stand-by materials, warehouse space and unnecessary stock insurance and handling.

Your Wickwire Rope distributor is a good man to know. He's quality people handling quality products. Buy your wire rope and slings from him. You'll find that the many valuable services he offers far outweigh any apparent price advantage you might gain by buying direct.

CF&I WICKWIRE ROPE A CF&I PRODUCT

A PRODUCT OF THE COLORADO FUEL AND IRON CORPORATION

3152

what goes into a successful submersible?...

The three basics of a successful Submersible are the PUMP... the SEAL... and the MOTOR. Byron Jackson is the *only* submersible manufacturer who manufactures all three and combines them in BJ Submersible Pumps... to answer a full range of pumping requirements.

BJ subette

the packaged answer to wells 6" and 8" I.D. and larger in capacities from 30 to 260 GPM.

the pump

BJ has been successfully manufacturing submersibles for over 30 years and has maintained its leadership in design and construction ever since. That's why you get the *best pump* for your specific needs. (NOTE the extra spacer bearings for longer pump life!)

the seal

The BJ Mechanical Seal is used to prevent water entering the oil-filled motor. This precision seal requires no operating adjustment. It is designed so that it is completely unaffected by sand.

the motor

Byron Jackson's oil-filled submersible motors are *100% free from internal corrosion by water. No special sealing sleeves. No exposed windings which demand special covering or insulation. BJ makes the only submersible motor which is easily re-wound with standard materials!*

plus exclusive BJ pressurmatic

BJ PRESSURMATIC—*another BJ submersible first*—provides sure, automatic sealing pressure to the oil in the motor—by simply utilizing the natural buoyancy of oil over water.

subette

is the line leader to Byron Jackson's time-proven line of Submersibles in sizes through 750 hp. Be sure to specify BJ Subette for your next industrial or municipal pumping needs. You get immediate delivery from stock.

BJ

Byron Jackson

Division of Borg-Warner Corporation

P. O. BOX 2017, TERMINAL ANNEX • LOS ANGELES 54, CALIF.

Strataflo FOOT AND CHECK VALVES

WITH THE

FAMOUS

SILICONE TREATED

Rubber Poppet

They can't stick, They can't leak!

Strataflo Foot and Check Valves end leakage troubles, save wear and tear on pump, save their cost in service calls. Ideal for jet-type pumps. Write for Bulletin 301.

Order from your Jobber

Strataflo

STRATAFLO PRODUCTS, INC.
FORT WAYNE 1, INDIANA

"Complete Service from Well to Drainage"

That's the slogan of the M&M Pump and Well Service Co. of Rockford, Ill. The firm was started just six years ago, yet last year did $250,000 worth of business, and the future promises even more.

ANYONE getting within a 25-mile radius of Rockford, Ill., cannot help but be aware of a well drilling and water system firm called the M&M Pump and Well Service.

The highways, secondary roads, even farm roads that amount to something little better than a path are lined with 18 by 24-in. roadside signs which were put up by the six-year old company.

Howard Meyers, the tall, easy going owner of M&M says there are better than 700 of them, and this bit of advertising is just a small part of the overall program. To go with them, he has several telephone book ads, double sized matchbook covers imprinted with the firm's name and extent of services, desk calendars, business cards, signs in front of the establishment and painted on every truck, even regular spot radio announcements over WRRR in Rockford.

Now 36, Howard would make fine material for a Horatio Alger novel.

It all started just six years ago, when Howard began tinkering with a portable pipe driver which he planned to use to sink two-inch water wells some 50 feet into the soil in

Howard Meyers, owner of M&M Pump and Well Service, poses in front of the firm's place of business with his wife Mary. Starting out alone, Howard now has 19 employees on the payroll, including three full-time drillers, two helpers.

Here is Howard Meyer's newest rig, a Bucyrus-Erie 1-W, putting down a farm well near Roscoe, Ill. The firm also has two other drilling machines to handle its growing business. A bulldozer and a backhoe handle trenching and excavating.

and around Rockford. Then he invented a hydraulic pipe puller, to lift the well points out of the ground when they needed repairs. It wasn't long after this that he had the tools perfected, patented, and making money for him.

And from this seemingly miniature attempt at supplying water systems, Howard Meyers has built a firm which last year did a quarter of a million dollars worth of business!

He still sells and rents out the portable pipe drivers, but now has three machines to take care of the well drilling: a Keystone 53, a Bucyrus-Erie 20-W, and a Bucyrus-Erie 1-W. The Keystone is mounted on a '49 GMC, the 20-W, only a year old, on a '52 Ford, and the 1-W on a '42 Dodge army surplus tandem axle.

The 1-W, acquired in July of this year, prompts a smile and a story from Howard:

"When the boys first laid eyes on the rig, they were pretty doubtful. They didn't believe anything that small would come through with the kind of footage they'd been used to getting with the bigger, heavier machines. But the machine itself changed their minds fast enough.

"One day last week, one of the boys took it out on a job, set up, and put down 90 feet of hole in one day. Any machine that puts down that kind of

footage is nothing to laugh about." The job was for a surburban water well on which 4-in. cable tools were used. The machine had put down five complete wells in little better than a month, all with 4-in. cable tools and all down to about 100 feet. On each of these jobs, the formations — topsoil, sand, gravel, clay, limestone — prevented the drilling crew from using the machine as a jetter. But they plan to use it that way where the formations permit.

Brad Elmore, John Long and Truman Hinkle are the three full-time drillers on the company payroll. Jack Stam and Mike Meyers, the latter Howard's 15-year-old son and a sophomore in high school, help out.

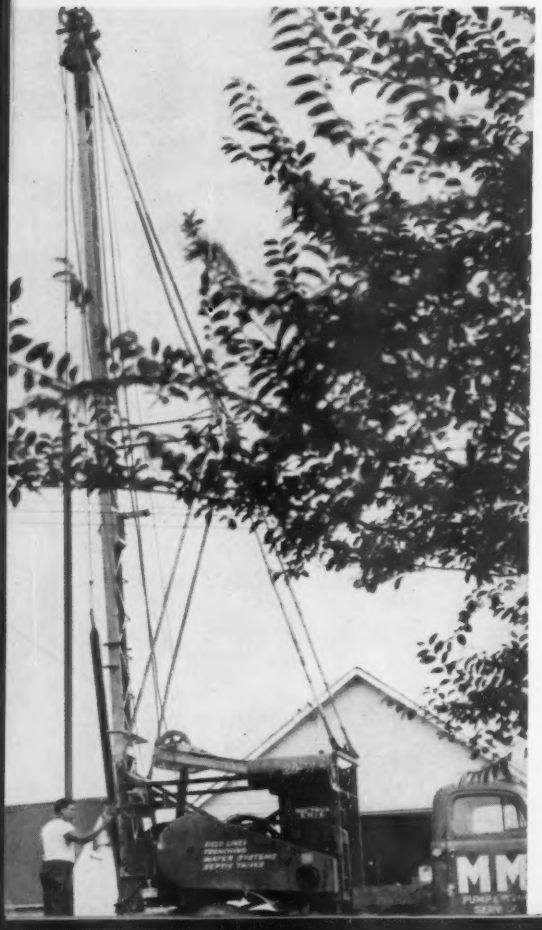
The larger machines are used to sink 6-in. diameter wells which run approximately 100 feet, although the boys have gone deeper on more than one occasion. With the two larger machines, the crew had been averaging approximately 350 feet of 6-in. hole a week during the nine month warmer period, and somewhat less during the three remaining colder months of the year. Most of the wells are domestic jobs, but at one time or another, the crew has put down industrial, air conditioning, and irrigation wells.

Going down but 100 feet or thereabouts, the crew has had little trouble with lost tool strings and fishing jobs. But last August, John will relate with a little coaxing, they did have some trouble on a domestic well in the city.

With the 20-W on the job, they noticed the tools sticking at 60 feet when they ran into some limestone, unexpected at this level. The string started to slide off on the harder formation, but they pulled it out in time to avoid serious trouble. They loaded 10 sticks of 40% strength blasting powder into the hole, and with electric cap and primacord, set off the charge and broke through. The well finished off at 110 feet, produced a 40 gpm flow.

Actually, drilling water wells is only a part, albeit a substantial portion, of the total business carried out by M&M. The company slogan, appearing on most all of the advertising material put out by the firm, is "Complete Service from Well to Drainage."

And the slogan gives a good indi-



Mike Meyers, Howard's 15-year-old son, is at the controls of the firm's 20-W. Just set up on a farm near Rockford, the machine was to be used to put down a 6-in. well for a customer.

One of the M&M Pump and Well Service drillers puts down a farm well using 4-in. cable tools on the new 1-W. The machine is mounted on a '42 Dodge army surplus tandem axle truck.

cation of the company's range of work, for M&M not only drills the well, it puts in the entire water system including plumbing and plumbing fixtures, water heaters and softeners, excavates for and sets septic tanks, even trenches and installs piping.

To perform this multi-phase set of tasks, the company has an Allis-Chalmers HD5 dozer and front-end loader used in excavating, clearing, and backfilling; a Quickway truck mounted backhoe shovel, a Sherman backhoe mounted on a Ford industrial tractor with an industrial loader used to trench for pipe and excavate; a flatbed Dodge truck equipped with derrick and winch to handle the heavy casing and set pumps, a Lincoln welder, and 10 other various size trucks used for service calls.

Nineteen employees are on the M&M payroll, and as Howard puts it, "They are more personal friends than just names on a payroll." Watching one employee after another saunter into the Meyer kitchen off the business quarters for morning coffee served by Mary, Howard's wife, confirms that statement.

M&M's business, increasing monthly so fast even Howard is a little bit taken aback, is kept in high gear by a hard working, closely knit organization, and that sound and extensive advertising program.

Getting back to promotional material, there is another part of publicity which the firm enters into: actual displays. The firm sets up pump and water system displays at the annual Home Show, displays more of its wares at the 4-H Fair, and at the Task Bridge Picnic — a get-together that has grown to inter-state proportions — they set up one of the drilling rigs. At last year's picnic, the drilling crew set up the 20-W and actually put down some hole by way of demonstrating. To top it all off, the firm had a telephone dial clip-on distributed recently. It fits over the dial, has police and fire emergency numbers on it in addition to the M&M number.

Howard will be the first to admit that it takes more than advertising to build and maintain a successful con-

(Continued on page 36)

With his 21-W, George Moran drills a 4-in. air conditioning well for a drug store in Auburndale, Florida. The well went down 210 feet, pumped 800 gph.

From Oil to Water Wells

George E. Moran, Auburndale, Fla., began drilling in the Texas oil fields back in 1914. He drills water wells now, but some of his oil and water drilling experiences make interesting reading.

AUBURNDALE, a small town surrounded by 500,000 acres of orange groves, is located just about smack in the middle of the state of Florida. As a winter resort, Auburndale does not come close to established centers like Miami, West Palm Beach, or St. Petersburg. But can Miami, West Palm Beach, or St. Petersburg come close to Auburndale when it comes to an experienced story-telling driller? We think not; Auburndale's driller of wide experience, George E. Moran, started drilling in the oil fields about the time of World War I, but let Moran tell it:

"I started my career in well drilling in Humble, Texas in 1914. The first well I ever worked on was at Moon Shine Hill just out of Humble. I worked on a rotary rig for the Producers Oil Co. We went down 3,500 feet on that job and had flush production, 10,000 barrels a day, but after about 30 days she started to fall off.

"Being a 'boll weavil' (Moran's term for a beginner), my job on that well was firing the boiler. A boll weavil couldn't do anything on a job like that except blow up the boiler and kill no one but himself.

"Then like all oil field workers, I

started booming around from field to field. Any time a wildcat blew in, we headed for that field like a martin to his gourd.

"On one of my jobs during that time, around 1915, I was working for a driller called Whop Down Dunmam. He could whop a well down faster than any driller of that time—and could have the darndest fishing jobs known to the human race. He gave me my first drilling job, the night run, reaming behind Dunmam. Boy, what a job. Nobody would have it.

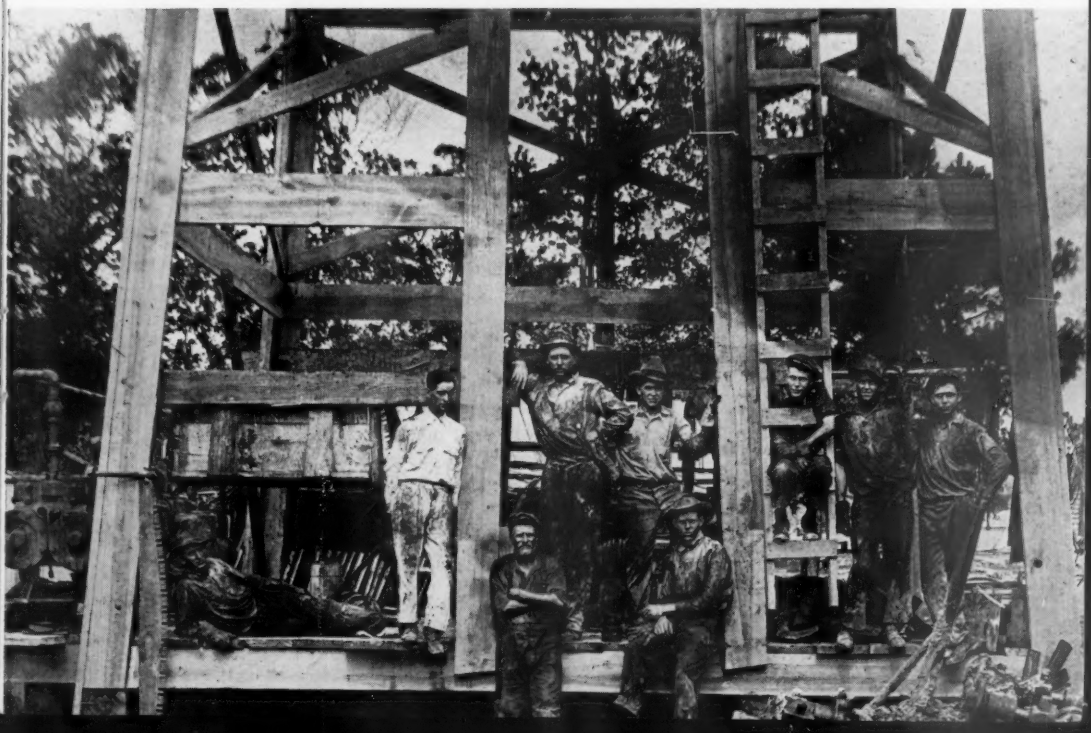
"Then in 1917, I ran into the most unusual drilling job ever. It was at Sour Lake, Texas. We were down 2,700 feet with the casing all set. We had washed the well and were swabbing her in, but it looked like we weren't going to get any kind of a flow.

"A well was going down about 75 feet away from us. They were having gas trouble. Suddenly their well started to blow. At that moment my swab was down 2,000 feet and we'd started pulling it up. I was bringing that swab up with my engine wide open; my derrick man was squatted with his hand on the control valve. Soon as the swab came out the derrick man closed the valve, I shut the engines down, and man I mean we took out from there. I ran through a reserve pit, was up to my waist in fluid mud before I knew it.

"When I got to the other side of the pit, I looked back. That well was really blowing, moving 900 feet of 4-in. pipe out of the hole. It went straight up through the 112-ft. derrick, flopped over and threw a loop around our boiler, but it broke nothing but the steam header valve. My pot man had long since shut off his fuel oil and left his steam atomizer wide open (safety).

"After that we loaded our rig on

Although he drills for water these days, 40 years ago George Moran (sitting on ladder) was working in the Texas oil fields. The picture was taken 40 years ago.



bull wagons and hooked on 15 yokes of steers to move 10 miles to the nearest rail. We stacked the rig on flat cars, shipped it to New Orleans; from there we went by ship to Tampico and on up the Panuco river, but that my dear sir is another chapter." And his book of drilling tales runs into a good many chapters.

George Moran confines his work nowadays to drilling for water. From Auburndale, he covers a radius of roughly 75 miles: to the Glades south, northeast to Daytona Beach, and northwest to Yankee Town.

He operates with a single Bucyrus-Erie 21-W, puts in 3- to 6-in. wells for most any purpose. Almost all of the 6-in. work is done on irrigation and recharge wells. Air conditioning wells run four inches, and domestic wells are either three or four inches in diameter. On that range of diameters, Moran does well on a monthly production basis, explains:

"I've been trying to put down a thousand feet a month, but 700 feet is the best I've been able to do so far." The area around central Florida, which Moran covers, has up to 10 feet of topsoil, fine sand to about 40 feet, a 20-ft. clay bed, then blue gumbo for another 10 feet and white lime to about 80 feet. From there on down it's flint, and gray and blue gumbo to 160 feet. The water bearing stratum occurs a little past 160 feet, in Coquina or Tampa lime where most wells are bottomed.

Moran doesn't do too much in the way of direct advertising. To keep business coming in he believes in cultivating friends, and as Moran puts it, " . . . also by being a very helpful Henry."

In June of 1954, Moran put in an irrigation well for Lou Burks of Auburndale. It was on this well, a 6-in. job down to 250 feet, that Moran ran into his worst fishing problem.

With the hole down to 132 feet, the bit broke through a flint formation, turned and hung. Then the hole caved in and Moran had an entire string of tools buried. Eventually, he drilled a 3-in. hole alongside the caved 6-in. one. He went down one foot past the original one to 133 feet, then dropped a stick of powder down the 3-in. hole and shot the bottom. The 3-incher received the cave from the 6-incher. That permitted Moran to pull out his tools easily.

So it goes with George Moran. He's been concentrating on the small diameter water wells of late and with as much demand for water as oil these days, George E. Moran figures he'll do all right drilling in and around Auburndale for some time to come.

"Here comes old 'you made 40 feet yesterday, let's get 80 today.' "

You have an *ace in the hole* when you use Tiger Brand Mor-Spring Lines

• Tiger Brand Mor-Spring Drilling Lines were designed to provide exactly the properties you need for successful cable tool water well drilling. Specially selected high quality open-hearth steel enables these lines to withstand repeated heavy loads. A carefully worked out arrangement of individual wires gives them excellent resistance to abrasive wear, makes them flexible and easy to handle.

When you use a Mor-Spring Line, you are using the best available drilling line for your purpose: a line that was designed to solve *your specific problems.* A line that assures long, low-cost service. Ask for Tiger Brand Mor-Spring next time you buy.

U·S·S AMERICAN TIGER BRAND MOR-SPRING DRILLING LINES

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION
GENERAL OFFICES: CLEVELAND, OHIO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

UNITED STATES STEEL

News of the month

Layne & Bowler, G-E Produce Submersible

Two companies, Layne & Bowler Pump of Los Angeles and General Electric, have joined in producing the Verti-Line submersible booster pump designed specifically for industrial and municipal pump users.

The pump, according to the manufacturers, embodies many refinements such as: oversize shaft, longer bearings with protective caps, impeller seals, mechanical shaft seal designed specifically for submerged service, and a choice of either mixed-flow or radial-flow impellers. The General Electric submersible motor has a larger oil reservoir and a spring-loaded resilient bag which permits the sealed motor to breathe with changing pressures and temperatures.

A bulletin containing description of pump and motor features, specifications, selection tables and application data is available from Layne & Bowler Pump Co., 2943 Vail Ave., Los Angeles 22, Cal.

Pleuger Appoints Sales Manager

Alfred B. Krechtler has been named eastern sales manager of Pleuger Submersible Pumps, Inc., Lancaster, Pa. He will direct Pleuger sales efforts east of the Mississippi River.

Krechtler, a Mechanical Engineering graduate of the University of California, has been active in the pump industry since 1940. The Pleuger pump line extends from ½ hp to 1,000 hp capacities for both domestic and industrial uses.

AWWA Booklet Now Available

A new booklet, "American Standard Specifications for Vertical Turbine Pumps," has been published by and may be obtained from the American Water Works Assn., 521 Fifth Ave., New York 17, N. Y., for 50 cents a copy.

The document was sponsored by AWWA and has received the official approval of the American Standards Assn.

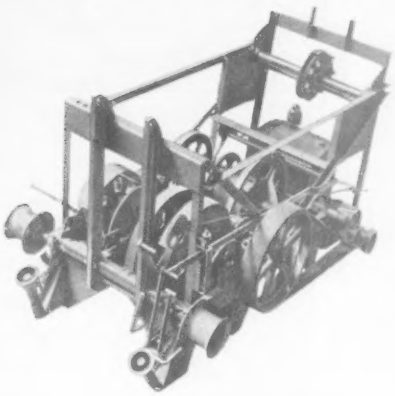
The specifications include a table of standard nomenclature, engineering data, and factory inspection and tests. Both water-lubricated pumps and oil-lubricated pumps are covered.

New Model Filter Offered by Filtros Inc.

A new water filter, the Model B, has been announced by Filtros Inc. Called Flo-Clear, it is a porous ceramic cylinder held together by cast aluminum caps. It is installed by screwing into the end of any supply pipe where water is being pumped from lake, stream, well, cistern, pond or pool.

According to the manufacturer, the filter will trap and filter out all suspended foreign matter such as sand, grit, gravel, algae, insects and other substances which might otherwise

Why You Get Long-Life Performance From a Bucyrus-Erie



ONE big reason behind the dependability and long life of Bucyrus-Eries lies in the drill frame. Of all-welded construction and basic box-section design, it provides a solid foundation for the drilling machinery, locking it in accurate alignment.

Shaft bearings are welded in place, then line bored to insure perfect alignment of shafts, reels, and gears. This allows the accurately machine-cut gears to mesh correctly year after year, transmitting power smoothly with a minimum of friction loss. You get smooth operating, long lasting performance.

Whenever adjustments or repairs are needed, they can be made easily. The frame is constructed so that all moving parts are readily accessible and easy to remove or replace. You can keep your drill working at highest efficiency.

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damage the precision working parts of pumps.

For further information write to Filtros Inc., East Rochester, N.Y.

Plastic Pipe Report To Be Available Soon

The National Sanitation Foundation, Ann Arbor, Mich., will make available shortly a complete report covering plastic pipe for potable water supplies.

The report was reviewed by the Advisory Committee on the Plastic Pipe Study and representatives of the NSF. The committee is composed of public health authorities and plastic pipe industry leaders.

Ground-Water Report For Wyoming Area Issued

Approximately 1,700,000 acre-feet of water is stored in the unconsolidated sand and gravel deposits of the North Platte river valley in Goshen county, Wyo., according to a Geological Survey report.

Large amounts of ground water of satisfactory quality could be pumped for irrigation, industrial, or municipal supplies in the area. Consumptive use of ground water, of course, would reduce the present gain in the flow of the North Platte river in the area, to the extent of that use. Smaller quantities of ground water could be pumped for irrigation in the valleys of Horse and Bear creeks.

In addition to the descriptive text, the report contains geologic cross sections, logs of wells and test holes, records of 938 wells and springs, and chemical analyses of water samples.

Pending publication, mimeographed copies may be consulted at offices of the Geological Survey, 300 Federal Recreation Bldg., Cheyenne, Wyo., and 1242-G, General Services Bldg., 18th and F Sts., NW., Washington, D.C., and of the Wyoming State Engineer, State Capitol Bldg., Cheyenne.

Pump Mfgs. Association Meeting Held

The 23rd annual meeting of the National Association of Domestic and Farm Pump Manufacturers was held October 6 and 7 in the Sherman Hotel, Chicago.

F. E. Myers II, vice-president, The F. E. Myers & Bro. Co., Ashland, Ohio, was elected president, succeeding H. R. Lafferty, head of Red Jacket Mfg. Co., Davenport, Iowa.

D. L. McDonald, president, A. Y. McDonald Mfg. Co., Dubuque, Iowa, was elected vice-president and chairman of the executive board of directors. John P. Curtin, vice-president, George D. Roper, Corp., Rockford, Ill., was elected treasurer. New directors elected were H. S. Lauterbach, president, Sta-Rite Products, Inc., Delavan, Wis., and Louis Wozar, The Dayton Pump & Mfg. Co., Dayton, Ohio.

Jack Hosford, executive secretary, gave a run-down on the promotional calendar for water systems dealers and co-operating suppliers of electrical power, beginning in January and climaxing in May — National Water Systems Month.

Medina County, Texas Report Issued

Streams crossing the Edwards limestone in Medina county, Texas, supply large volumes of water to the principal limestone aquifer which supplies

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lowest priced... longest profit

submergible on the market!

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This is it! The newest member of the M-W family—backed by nearly 100 years of engineering know-how.

It's low, low in price, and . . . from Modern-Woodmanse . . . another bonus! The longest discounts ever given in this category. You enjoy larger volume sales *plus* bigger profits, not smaller ones!

This Modern-Woodmanse wonder pump is water-cooled and water lubricated. It's absolutely noiseless—and it can be taken down completely, and serviced on the job!

There's no priming. It's frost-proof, tamper-proof and trouble-free. We test run every pump before it's shipped!

We'd like your business. And this highly efficient pump should *earn* it. There's a full line of great new models, each with the lowest price on the market today. Each with 1-year warranty. *Send for literature and prices today.*

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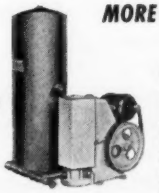

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Sales Division George Getz Corp. Dept. TD, West Chicago, Illinois

the cities of San Antonio and Comal Springs, according to a report prepared by the Geological Survey in cooperation with the Texas Board of Water Engineers.

The report contains records of 1,099 wells and 23 springs, including logs of 127 wells, periodic measurements of water levels in 54 observation wells, miscellaneous discharge measurements of 3 streams, and chemical analyses of 129 water samples obtained from wells and springs. The records show that 895 wells are used for domestic and stock purposes, 14 are used for public supply, 35 for irrigation, and four for industrial purposes, and that about 150 wells, including about 100 oil tests, are not used for water supply.

Pending publication, typewritten copies are available for inspection at the Geological Survey, Room 1242-G, General Services Bldg., 18th and F Sts., N.W., Washington, D. C., and at 302 W. 15th St., Austin 14, Texas.

Public Education Group Formed by NWWA Division

The business of well drilling is booming today as never before largely because of the continuing move from the city to the country where homeowners, settling beyond the water mains, have to put in their own water supply systems.

Everyone is getting into the act. Irresponsible drillers interested primarily in making a quick profit and moving on to the next job are operating in the same territories with professionally-trained and experienced well drilling contractor accustomed to working under contract agreement with the homeowner.

Every unsatisfactory well drilled reflects discredit not only on the offending driller, but on the industry as a whole.

The adverse effect on public relations is one that no industry could long afford to ignore. Accordingly, the National Water Well Association, representing more than 1,500 of the industry's most progressive drilling contractors, has embarked on a program of constructive action to correct the situation.

Recognizing that the public needs facts to fill the present vacuum that exists in reliable information about ground water resources, water supply, and standards for judging competent well drilling performance, the National Water Well Association has formed a Public Education Committee of the Manufacturers and Suppliers Division.

It will be the committee's task to publicize in newspapers, magazines, on the radio and television the full story of how to develop a satisfactory running water supply in rural areas.

The campaign will be built around the ethical well drilling contractor and the service he provides, since a well is the starting point for most water systems.

Every effort will be made to wean the public away from operators who lower industry standards.

To this end, distinguishing characteristics of the competent and thoroughly qualified well drilling contractor will be continually emphasized in all publicity released by the committee.

The program is aimed additionally at educating both farm and non-farm rural homeowners of the need for wells and pumping equipment of much larger capacity to meet increased water demands.

In the long run, the Public Educa-

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Backed by Acme's 54 years experience as manufacturers of highest quality cable tools, the Acme Alloy Rein Type Drilling Jars are designed, forged, heat treated and finished to give maximum strength and to withstand the shock of constant jarring without fatigue failure, and most important, to give extra wear to establish jar drilling records surpassing any now on record.

Acme Alloy Rein Type Drilling Jars are made for water well drillers to API specifications in the following sizes:

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Order through your local supply company

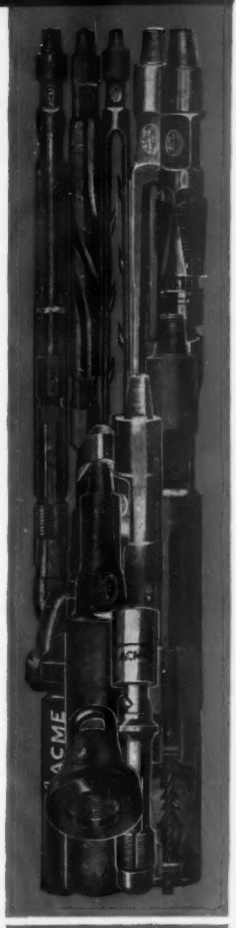

Fig. 107AA
Acme
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tion Committee expects its information program to boost profits for the ethical well drilling contractor by enabling him to sell homeowners larger and better wells at a price that high class dependable workmanship will justify.

C. D. Leiter, F. E. Meyers & Bro. Co., Ashland, Ohio, is chairman of the committee. Other members are Carl Carlberg, Mid-West Well Supply Co., Chicago; Jack Downend, Sanderson Cyclone Co., Orrville, Ohio; R. A. Hindman, Larkin Co., Butler, Pa.; C. J. Stubble, National Supply Co., Toledo; and David A. Williams, R. R. Howell Co., Minneapolis.

Announce New Type Plastic Pipe Couplings

New type couplings and adapters for use with polyethylene pipe have been developed by Wilmington Plastics Co., 810 S. Heald St., Wilmington, Del. The fittings, injection molded from rigid unplasticized polyvinyl chloride, are resistant to corrosive action and form a tight joint without setting up undue compressive stress in the polyethylene, according to the manufacturer.

They are presently available in couplings, polyethylene to polyethylene (bottom); and adapters, polyethylene to metal (top), in ¾- and 1-in. sizes. The fittings will ultimately be available up to and including 2-in. pipe sizes. Write for complete information.

Pipe Coating Brochure Available from Tapecoat

A protective coating for pipe, pipe joints, fittings and couplings is described in a new brochure just announced by the Tapecoat Co., Evanston, Ill.

According to the announcement, the brochure covers the complete story on Tapecoat-X, a new coal tar coating in tape form which according to the manufacturer, is made with an extra thickness of coal tar to provide double-wrap protection from single-wrap application.

A copy of the brochure is available on request to the Tapecoat Co., 1523 Lyons St., Evanston, Ill.

Much Ground Water In Ohio River Valley

A report issued by the West Virginia Geological and Economic Survey in co-operation with the Geological Survey indicates that large supplies of ground water are available to industrial and municipal users along the Ohio River valley in West Virginia.

The largest supplies are obtained by locating wells along the riverbank where pumping will cause the river water to flow into the wells by natural filtration through the alluvium. The potential yield of ground water per mile of riverbank is estimated to range from eight to more than 40 million gallons a day.

The water from the river alluvium is moderately hard to very hard and contains enough iron and calcium to cause incrustation of screen slots in some wells. After appropriate treatment, however, the water from the alluvium is suitable for nearly all uses, and for some purposes it can be used as it comes from the well. Its temperature is normally below 59°F, so that it is well suited for air conditioning and industrial cooling.

The present use of ground water in

the Ohio Valley of West Virginia is about 60 million gallons a day, of which 40 million gallons a day is used by industry, about 10 million gallons a day by municipalities and public institutions, and the rest by small consumers.

The report, titled "Ground-water resources of the Ohio River valley in West Virginia," may be obtained from the West Virginia Geological and Economic Survey, Morgantown, W.Va.

Kansas County Ground Water Report

Moderate to large supplies of water can be obtained from wells penetrating the rocks in Rawlins County in northwestern Kansas, according to a Geological Survey report recently released.

The rocks that crop out in the county are sedimentary. The oldest is the Cretaceous Pierre shale, which is exposed only in the valleys of the major streams in the county. Nearly everywhere in the county the Pierre is overlain by unconsolidated deposits, including the Ogallala formation, of Tertiary age, and the Sanborn formation, terrace deposits, and alluvium, of Quaternary age. The Ogallala formation and the terrace deposits are the principal aquifers in Rawlins County.

Dayton Appoints Sales Representative

W. Bruce Minteer of Duarte, Calif., has been appointed district sales representative of the Dayton Pump and Mfg. Co. for the state of California.

James Pease, Dayton Pump's field

Mr. Driller, you can't recommend a harder worker for any well than a JENSEN JACK.

It works hard to please your customer — and to back up its 35-year-old reputation for dependable service. Simple design and few moving parts give a JENSEN JACK the stamina to work night and day, pumping all the water your customer needs. You'll be glad you recommended a JENSEN — it's easy to install and counterbalance.

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. . . easier to repack
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JENSEN JACKS

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sales manager, who made the announcement, said Minteer will be responsible for the sales of all Rapidayton products.

A graduate of Beloit college in Wisconsin, Minteer has been in sales in California for several years.

From the State Associations

Kansas

The eighth annual convention of the Kansas Water Well Drillers Association, Inc. was held at the American Legion Home in Salina Oct. 21 and 22. Approximately 100 persons attended.

Talks were given by V. C. Fishel, "The Effects of the Drought on the Water Table"; Frank C. Foley, "The National Water Well Association by a Director"; Reid Flury, "Financing Farm Water Supplies" and Albert M. Ross, "Tips to Employers About the Kansas Workmen's Compensation."

Michigan

At a meeting September 24, the Michigan Well Drillers board of directors selected Leo Riegler, Muskegon, as the convention chairman for 1956.

The 1956 convention will be held in Lansing May 17 and 18 with headquarters at the Hotel Olds. Indoor display space will be available in the Armory in Lansing, outdoor space adjacent to that building.

New Mexico

The New Mexico Water Well Contractors Association held its annual meeting Oct. 8 at the Alvarado hotel in Albuquerque.

Officers elected were V. R. Turner, Albuquerque, president; G. Perry, Glen Cove, vice-president; H. Sheets, Albuquerque, secretary and E. E. Klecan, Albuquerque, executive secretary. Directors elected were J. Wagner, Las Vegas; R. Taylor, Lincoln; R. E. Cleveland, Espanola, and H. Dody, Albuquerque.

Pennsylvania

The fall meeting of the Pennsylvania Water Well Contractors Association Inc. was held October 22 at the Roosevelt hotel in Pittsburgh.

After business sessions, members heard a talk by R. Bablundon of the Permutit Water Conditioning Co. Plans for the annual convention in April, 1956, at State College were discussed.

Virginia

At the annual meeting of the Virginia Water Well Drillers Association, Inc., September 21 in Richmond, the following officers were elected: J. C. West, president; T. Pence, 1st vice-president; W. A. Doss, 2nd vice-president, and C. R. Sundquist, secretary. Directors for 1956 are P. Schweitzer, B. Chappel and W. C. Falwell.

The members voted to have a spring meeting and a committee was appointed to handle this matter. A date and place for the spring meeting have not yet been decided.

Hurricanes Help Raise Levels of Ground Water

The official story of the record-breaking flood flows and the rising levels of ground water in the northeastern states as a result of excessive rainfall in the wake of hurricanes Connie and Diane, has been issued by the Geological Survey.

According to the Survey's monthly

Water Resources Review, records made at scores of Survey gaging stations on eastern streams showed that from Massachusetts to North Carolina following heavy rains associated with the two hurricanes, many rivers broke all previous high-water records.

The intensely flooded area extended from southern New England to northeastern Pennsylvania. Carl G. Paulsen, Chief Hydraulic Engineer for the Survey, said that practically all the rivers in south-central Massachusetts reached higher stages than ever known. The Connecticut River was the notable exception. This is to be expected, he added.

"The storm hit only southern New England and only the smaller rivers and the tributaries of the big rivers were in flood," Mr. Paulsen said. "The explanation for these floods is in the torrential rains that fell August 17-19."

The Weather Bureau has reported a maximum of 19.7 inches for this period which fell on ground that had already been soaked by previous heavy precipitation to the point where it could absorb no more water.

"On the favorable side in New England, the records show that ground-water levels in the flood area generally were above average for August and many wells were at record highs for that month. Storage in major reservoirs increased in the southern portion but decreased in the north."

"While the East is still licking its wounds from the side-affects of August hurricanes," commented Mr. Paulsen, "Arizona is rejoicing over the continued improvement in its water picture."

"It should also be borne in mind," he added, "that while the damage

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from excessive rains associated with the hurricanes caused much loss of life and damage estimated in the hundreds of millions of dollars, the results of the storms were not all bad. A drought that had been building up for some time in several parts of the area was definitely broken as ground-water aquifers were recharged and streams rose. Sustained streamflow is assured for quite some time."

From the State Capitals

An impartial analysis of state and municipal legislative and regulatory trends. Prepared by Bethune Jones.

New developments in the field of water supply and conservation, as reported from state capitals and municipalities throughout the country, include the following:

California

If the California legislature next year again takes up the controversial question of creating a new and separate state department of water resources, the Irrigation Districts Association of California will oppose any "straight line governor controlled department."

Such a stand was made clear in a letter from Robert T. Durbrow, executive secretary of the association, to Assemblyman Casper W. Weinberger, San Francisco Republican, who heads a House committee studying water department proposals.

The study is concerned primarily with engineering and financing features of the $1,500,000,000 plan as advanced by State Engineer A. D. Edmonston, who has said it could be financed by revenue bonds. The project envisions transporting water from a dam behind Oroville, which is in the northern portion, to southern California.

Illinois

Mayor Richard J. Daley of Chicago made public a report from the engineering firm of Alvord, Burdick & Howson proposing an expenditure of $295,892,945 in the next 25 years to improve the city's water supply system.

Under the proposed program, the city system would eventually supply water to all Chicago suburban communities, except those on the North Shore and in Indiana. Chicago water would be furnished as far west as the Fox River valley towns of Elgin, St. Charles, Geneva and Aurora; as far southwest as Lockport and Joliet; to Barrington on the northwest and to Steger on the south.

Four main express mains, and smaller branch lines, would carry the water to the suburban communities, which would operate their own distribution systems.

Although noting that some of the metropolitan area suburbs have adequate water from deep wells, the engineers noted that in many others the water supply is inadequate and often shortage is acute. Rapid industrial and residential development has resulted in lowering of the water table, in some areas as much as five to eight feet a year, the report said.

Rhode Island

Governor Roberts appointed a seven-member Rhode Island Water Resources Co-ordinating Board to work on the state's fresh water problems.

Created under a 1955 state legislative measure, the board is authorized to make recommendations to the gov-

(Continued on page 36)

the driller and the LAW

Articles appearing under this heading are published for their general interest, and to remind readers that it is not safe to overlook the legal aspects of a water well drilling business. The articles are not intended to take the place of specific advice of counsel. For such advice, readers are urged to consult a local attorney.

Well Equipment Was Subject to Sales Tax

July 27, 1955, the Ohio Supreme Court decided an interesting point affecting the status, for sales and use tax purposes, of equipment that is sold for use in industrial wells. The decision was rendered in the case of G. M. Baker & Son, Inc. v. Bowers, Ohio Tax Commissioner, 128 N. E. 2d 14 (1955).

The company constructs, maintains and repairs industrial water wells for patrons. It furnishes and installs pumping equipment, casing, and motors, used by customers in producing water, the water being, in turn, used by the various customers in furthering manufacturing, processing, mining, agriculture, and horticulture. The company also sells products used in keeping the wells clean.

In some instances, the company's customers used the water produced by the equipment in question to cool compressors and condensers in producing gas or to generate steam to operate equipment or to provide a mix, or to cool machines in manufacturing, or in ingredients used in making paper, or for factory or store water supply, as well as for sanitation, heating, refrigerating, air-conditioning and irrigation purposes.

The State Tax Commissioner levied sales and use taxes on all machinery, tools and equipment sold to the company's customers, excepting instances where the company held exemption certificates.

On the company's complaint some adjustments — the nature of which is not disclosed by the court's opinion, were made by the Commissioner, but in the main the assessment was confirmed.

The Ohio Board of Tax Appeals upheld levy of the taxes and so did the Supreme Court on further appeal.

Apparently, the company's lawyer argued—unsuccessfully—that the use of the equipment was so tied into industrial use of the water as to exempt its sale by the company from use and sales taxes.

— A. L. H. Street

Drilling Partners Lose Water Guaranty Suit

(1) So far as concerns the rights of third parties, are two or more persons engaged in a common enterprise and sharing the profits therefrom partners, and thereby individually liable for acts of one of the members in transacting a drilling business — even though they are not formally organized as a partnership and the existence of a partnership is denied by one of the members?

(2) If there *was* an unfulfilled guaranty made by one member, and binding on the other because of the existence of a partnership, that the

water would be of good quality, did the owner waive the guaranty by making a partial payment on the contract price before the pump was installed or the water tested?

These were the principal questions answered by the Tennessee Court of Appeals, Eastern Section (Knoxville) in the case of Wyatt v. Brown, 281 S 2d 64 (1955).

The court decided that defendants in the suit, John Brown and Lloyd Dearing, were partners in well drilling, that the latter guaranteed that the well to be drilled for plaintiff would produce "good water," that the guaranty was not met, and that plaintiff was entitled to hold Brown and Dearing severally liable for a refund of $1,000 that had been paid by plaintiff on the faith of the guaranty.

Court Decision

A lower court had decided that only Dearing was liable, on the theory that there was no partnership. The Court of Appeals held that a partnership existed. These were the facts: Dearing attended to the actual drilling, but he and Brown shared equally all profits and losses; Brown kept a check on jobs by appearing frequently and making suggestions; he approved a cash discount and made decisions to resolve difficulties which arose in the drilling operation and he and Dearing jointly supplied pipe needed in the operations; when the well was completed but the water was unsatisfactory, Brown offered to chlorinate the well; nowhere was there an indication that Brown's share in the profit was in payment of any debt, interest or rent, or that Dearing's share in the profits was in lieu of wages.

At the trial it appeared that Dearing believed that there was a partnership, but Brown did not. The Court of Appeals applied a well settled rule of partnership law which essentially is that actions may speak louder than words in determining the existence of a partnership. The court said:

"It is not essential that the parties actually intend to become partners. * * * If they intend to do a thing which in law constitutes a partnership, they are partners whether their purpose was to create or avoid the relationship."

Brown Denies

Brown denied that he was bound by Dearing's guaranty to supply good water or water that would pass a health inspection, but the Court of Appeals applied the rule that, as against third persons at least, each member of a partnership is an agent of the firm who has authority to bind the partnership, in transacting firm business.

One further point should be of considerable interest to drillers who give a guaranty of water quality. Defendants argued that there was no proof that the water was not of good quality because the well was not chlorinated before being tested, a usual practice in establishing the health standards of water. But the Court of Appeals rejected this argument, saying:

"The evidence not only established a contract to supply 'good water,' or water that would pass a health inspection, but showed that the water was badly discolored, had an unpleasant odor and contained organisms harmful to the human health. It is true that the expert witnesses testified that the usual practice would be to first chlorinate the water and then conduct a series of successive tests to con-

(Continued on page 36)

from the MAILBAG

This page is open to any of our readers having questions to ask relating to drilling, driving pipe, dressing bits, etc. All letters will be answered promptly by experienced drillers and engineers, who are qualified to give intelligent advice on these subjects. We will publish as many letters of general interest as space will permit. Address: The Driller, South Milwaukee, Wis.

Wants Recharge Well Information

Dear Sir:

I need to contact someone who can give me information about pumping a well and recharging the formation in another well. The well I'm speaking of will be used for air conditioning and refrigeration equipment. The refrigeration equipment requires 10 to 15 gpm. On average summer days both refrigeration and air condition equipment require 50 to 60 gpm. On a few days above average temperature they will use up to 100 gpm. Water pumped from the well is approximately 62°F and return water is 110° to 112°F. The well is 8-in. diameter drilled through 25 feet of boulders, sand, and gravel. The formation was loaded with fine sand and silt. On a four hour pump test it produced only 15 gpm with drawdown to 24 feet.

I would like to know how close to this well it would be possible to recharge the formation and still have the water to use in the air conditioning and refrigeration system.

We have not drilled any observation wells because we felt that further information would determine where we should drill for observation.

It is important that we have this information immediately because the whole air conditioning system hinges on what can be done with this well.

T. A. N. Colorado

Dear Sir:

There are a few facts that must be known to answer intelligently, namely, B.T.U.'s that the water must absorb, thickness of water bearing formation, depth of the well, the rate of flow between the two wells and the normal direction of flow of the underground water.

The first thing that should be done is to see whether there is any more sand and gravel below. In any event, it would be advisable to set a good screen with as long and as large a slot as the formation will stand, then develop the well by water jetting and surging to see whether the yield can be increased.

It is possible to recharge the formation and use the water over and over again, but this is what usually happens: the B.T.U.'s that are absorbed in the water used for cooling the compressors must be absorbed by the formation. Part of this heat will be carried to the pumping well, and finally the formation between the two wells will absorb all the heat that they can, bringing the temperature up to within close to the water that is put into the input well. It is quite an engineering problem to figure out how far the input well must be put from the pumping well.

It seems that this is a problem for an air conditioning engineer who will work with the well driller and who has sufficient knowledge of air conditioning and heat exchange methods. Also, even if 100 gpm will be needed for but a few days, there is just no way that you can get along on less than 100 gpm without some way of storing the water for this demand.

BITS *from the wit sharpener*

"I'm going to put manure over the lower 40," the farmer casually mentioned to his wife.

Soon as he left the room, his daughter, just returned from finishing school, pleaded with her mother: "Why can't you get Dad to say 'fertilizer' instead of that perfectly horrid word 'manure'."

"Oh no," mother answered. "I'm leaving well enough alone. You should have heard what he used before I taught him to say 'manure'."

"Men all are alike," said Chicago born and bred Judy to her newly acquired roommate Jenny Lou from Atlanta.

"Oh men are all ah like too, honey chile," Jenny Lou replied.

"Will you join me in a cup of tea?"

"Love to. You get in first."

Boss to employee: "What's this I hear about you praying for a raise? You know I don't like people going over my head."

"What flavors of ice cream do you have?" asked the rich, elderly gentleman.

The pretty young waitress answered in a hoarse whisper: "Vanilla, strawberry and chocolate."

"You got laryngitis?" the old gent asked sympathetically.

"No," she replied. "Just vanilla, strawberry and chocolate."

Sweater girl: One who pulls your eyes over the wool.

"Do you have a suitable gift for a wealthy old aunt who is weak and can hardly walk?"

"How about some floor wax?"

Guy rushed into a bar at 10 a.m. one morning shaking like a leaf.

"Give me a fifth of whisky," he screamed at the barkeep.

The barkeep handed it to him. Right quick the shaky one opened it and chug-a-lugged it down.

"Give me another," he half shouted.

This one too went bottoms up. Then placing the empty on the bar, he steadied down, adjusted his tie and said:

"Well, what do you think of those Dodgers taking the World Series?"

"Say," the barkeep answered, "what you come in here for, to drink or talk?"

Hard to live with? Listen, last night my roommate stubbed his toe on a chair and said, "Oh, the perversity of inanimate objects."

An inebriated driller walked into an elevator shaft, fell four floors to the bottom. He picked himself up, brushed off his clothes and shouted indignantly:

"I said UP!"

When yuh ain't got no education, yuh jes' got to use yo' brains.

Star performers of the low price JETS!

RUGGED NEW

UNIVERSAL WATER SYSTEMS

Look what your customers get when you recommend these rugged new, self-priming UNIVERSALS—up to 500 gallons per hour at full range of pressure switch settings *automatically without need of a control valve*, regardless of varying water levels or tank pressure. They're easier to service, too. Cartridge-type mechanical shaft seal is threaded into pump bracket for quick replacement on the job. Bronze injector is removable to convert unit for deep well use. Available with 10 gal. tank as the package system "Uni-Mat"—or as a complete water system with ⅓ or ½ h.p. motor and choice of separate 18 or 42 gal. tank. Write for free fact-filled copy of "Bulletin U-34".

Recommend UNIVERSAL Pumps

THE RUGGED PUMP FOR RUGGED JOBS

UNIVERSAL MFG. CO.

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Complete Service . . .

(Continued from page 15)

cern. He'll also admit that most of the earnings, year after year, were poured back into the business.

But the scope and variety of his brand of promotion is playing no little part in the picture. Ingenuity, hard work, promotion, and a form of valuable advertising not apparent — satisfied customers — have resulted in the fabulous success story of the M&M Pump and Well Service Co.

Law . . .

(Continued from page 32)

clusively establish the health standard of the water. However, we are satisfied that, despite the lack of conclusive tests, there was sufficient evidence to sustain the finding of the trial court in this respect." —*A. L. H. Street*

News . . .

(Continued from page 30)

ernor for action to co-ordinate the water resources programs of the state and its municipalities.

In authorizing the creation of the new board, the state legislature directed it to begin a study which will include the following aspects:

1—Review current studies and programs of state agencies pertaining to water conservation and development.

2—Advise local authorities with a view to co-ordinating their plans "in an orderly and comprehensive water development program for the state."

3—Review and evaluate groundwater investigations already made.

EXTRA FEATURES that mean EXTRA FOOTAGE...

The superior service that drillers get from Bucyrus-Erie bits is due to the high quality steel used in them plus experienced design and the most modern manufacturing methods.

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- Extra long body sections give you more sharpenings per bit — longer bit life.

Get long-lasting top performance out of your next bit—buy Bucyrus-Erie. 4A55C

BUCYRUS-ERIE COMPANY South Milwaukee, Wisconsin

BARGAIN *counter*

All advertising in this section is payable in advance. Enclose your check or money order with copy. Rate: 60c per line. Minimum charge $2.40. No discounts; no commissions. Count your own copy to avoid delay. The average line contains 28 characters (20 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number if blind advertisement is desired. Closing date — 10th of preceding month. Example — January issue closes December 10th. Be sure to address separate inquires to each advertiser by using the correct box numbers. Mail Box inquires care of THE DRILLER, South Milwaukee, Wis.

DRILLS FOR SALE

#3½ Keystone drill powered with a 4 cylinder Waukesha engine in excellent condition, priced very reasonable with or without drilling tools and lines for 6" work. Alexander W. Blote, 13-14 River Rd., Fairlawn, N. J.; Phone: Fairlawn 6-0570.

#55 Speed Star, serial no. 9658; this machine is in excellent condition, equipped with cat heads and casing reel and starter; mounted on a good, clean 1949 Studebaker truck with good rubber; Price: $3750. Eugene Glidden, Lewisville, Ind.; Phone: 2405.

21-W drill with 34' power raised mast, cushioned top, mounted on '47 GMC truck with 2-speed axle, complete 3' string of tools, 1,000' new ⅝" drill line; 500' - ⅜" sand line; Price: $4000. S. L. Lawson, Sterling, Mich.

Model #70 Keystone, all steel, mounted on 1950 GMC truck in good shape; machine recently overhauled; Located in north central Tennessee; machine and truck $2,250.; machine and truck with 5⅝" tools, lines, etc. $2,950.
Box 630

DRILLS FOR SALE

20-W Bucyrus-Erie drill 1955 model; complete with 6" drill tools, cable, etc.; 2¼" x 3¼" joints. Frank Carroll, Brewster, New York; Phone 9-3341.

1953 Model #50 Keystone mounted on an Army 4x6 GMC with complete string of 6" tools; truck and machine perfect; Price: $5,000.00; Pat Eatherly, Carthage, Tennessee. Phone: 395.

1953 Bucyrus-Erie 20-W; mounted on 1935 Ford 1½-ton truck; catheads and casing reel, complete string of tools 2 x 3 joints, other water well equip. 300 ft. of ⅝" drill line and 500 ft. of ⅜" sand line; Price: $4150. Skinner Bros., R. F. D. 5, Box 80, Chillicothe, Ohio.

22-W Bucyrus-Erie equipped with casing reel, rubber cushioned sheaves and tool guide, with 6" tools and lines mounted on 1947 auto car; excellent condition throughout; Price: $4,500. Box 631

Bucyrus-Erie 24-L drill rig, semi-trailer, in good condition, standard equipment; price right. Shawver Well Co., Fredericksburg, Iowa, Phone: 114.

1953 Model #71 Speed Star drilling machine mounted on model B. M. Mack truck; excellent condition $5,500. Ernest Rizza, Westfield District, Middletown, Connecticut.

Failing model 36; Failing model 500; Sullivan model 22; all with drill pipe bits, tools and water trucks. J. G. Watson, P. O. Box 24, Bainbridge, Ga., Phone: 1289 after 6 P.M.

Star drill #72, with new Diesel engine, mounted on International truck; excellent condition; write or call Mr. Frank Devers, Findlay, Ohio. Phone: Rawson 2277.

DRILLS FOR SALE

Bucyrus-Erie 60-L well drill, approximately 7 months old, mounted on auto-car 5-ton truck with dual rear axle, new 1954 truck engine, includes cables and tools; machine now working near Erie, Pa. Box 625

Custom-built steel frame water well drill on Chevrolet truck, no tools $750. Nelson Standard Supply, Inc., 419 So. Hart St., Princeton, Ind.

1954 MODEL 1000 MAYHEW WELL DRILL MOUNTED ON F800 FORD TRUCK 1954 FULLY EQUIPPED WITH 6" BITS, STABILIZERS AND 18 LENGTHS OF 3½" O. D. .300 WALL DRILL PIPE 2⅞" JOINTS. Box 624

Cyclone machine with Reo engine mounted on cab-over Chevrolet truck, 5" and 6" string of tools; also with wire line. Phone or write Mr. Paul Snider, Route #2, Zanesville, Ohio; Gladstone 3-9231.

Bucyrus-Erie 20-W drilling machine with casing reel, mounted on 1½ ton, 2-speed 1947 International truck; price: $3,000. Tony Beets, Box 503, Cuba City, Wis., Phone: 169.

71 Speed Star, serial #7466, mounted on KB6 1948 International, machine and truck in good shape, machine has power hoist; Price bare: $3200.

33 Armstrong, serial number unknown, mounted on 1946 2-ton Ford with new motor, machine and truck in good shape, Price: $2200.

22-W Bucyrus-Erie, serial #5137 with U-4 International power unit on 1945 2-ton Mack, machine and truck in good condition; Price: $3900. Heater Well Company, 306 S. Salisbury St., Raleigh, North Carolina.

1-W Jetting machine; all tools, bits, rods, pump; mounted on '49 Chev truck; new Aug. 16th, used for one hole, price: $4000.

22-W, 2 yrs. old, mounted on Mack truck, tools, cables, welder, Al shape, price: $6000. C. Enfield, Buffalo, Iowa.

DRILLS FOR SALE

33-W Drill mounted on 1950 GMC fully equipped; all in A-1 condition, Price: $3500. Guy Hawk, 334 Caroline St., Saratoga Springs, N. Y.

Bucyrus-Erie 21-W, 1948 excellent condition; rig is ready for you to go into business; it includes tools and pickup truck; Price: $3500. Located at Milwaukee, Wisconsin. Box 626

Eli rotary drill, mounted on '46 Ford V-8 truck; new engine installed last year; spudding beam and bull reel added to make drill suitable for cable tools; $1,000 worth of new rotary bits ranging in size from 4¾" to 7¾"; 1,000' of drill pipe — 300' of it new, works good; Price: $4,000 for complete machine including mud pump. H. A. Spicer, 1011 Watson Blvd., Johnson City, N.Y.

Rig like Bucyrus-Erie 22-W mounted on Chev. truck; with tools for 8, 7 and 5" holes; also 2000' of ¾" drill line, $2300. R. Hennig, Princeton, Ind., Phone: 1307B.

#50 Keystone mounted on auto car equipped with casing reel, tool guide, blower and 6" tools and lines; price complete: $3000; less tools and lines $2500. Box 616

#70 Keystone mounted on Federal truck equipped with tool guide, blower and tools and lines for 6" hole; price complete $2000; less tools and lines $1500. These machines can be seen in operation; located in Mass. Box 616

MISCELLANEOUS

New & used pipe & casing 2" to 8"; write for new price list. Thomas H. Scheuren, 933 Fern Ave., Reading, Pa. Phone: 4-1287.

25 Oil wells, located in Mercer County, Ohio; approx. depth 1225 ft., Moore & Schamp Drilling Co., Box 86 St. Marys, Ohio; Phone: 5120 or 5146.

Unused Army drilling equipment in perfect condition, 3" API joints; now on hand, Prosser swivel and Bobcork and California rope sockets, casing perforators, tool wrenches, drill stems, sand pumps, joints for electric welding, 8" drive shoes, bumpers, anvil blocks, some repair parts for Star #71; deepwell turbine parts, electric generating sets, Ford industrial power units; 40% or more discount. J. B. Reed, Fredericktown, Ohio.

Arkfeld, all galvanized steel, pre-fabricated pump house; assemble and erect in minutes, heavily insulated with Ultralite Fibre Glass, rigid construction, versatile for servicing equipment; always dry inside, complies with all well codes and sanitation requirements, low initial cost, no upkeep; 30 year investment, money back guarantee. Write for circular and prices. Arkfeld Mfg. Co., Box 54, Norfolk, Nebraska.

New pipe casing in stock: 3", 4", 6", 8", 10", 12". Reconditioned pipe casing in stock: 3", 4", 4½", 5", 6", 8", 10", 12". Cutting and threading facilities; attractive prices on request. H. Schwartz & Sons, 2235 North Bodine St., Phila., Pa., Garfield 6-6464.

Special Offering: New 8" and 6" drilling bits approx. 5' lengths with 2" x 3" — 7 API pins, manufactured by Star Drilling Machine Co., shipped prepaid. For quotations write Degen Pipe & Supply Co., 4900 Sapulpa Rd., Tulsa, Okla.

WELL BUSINESS FOR SALE

Established well drilling and pump business, 2 Bucyrus-Erie machines, 21W and 22W, both mounted and fully tooled for 6" work; 2 late model pickups; casing; welding equipment; pump tools; pump parts; office supplies. Located in southeastern Wis. town of 70,000 pop.; Price will include trade name; full price: $24,000. Box 627

Excellent well drilling business all year work in Central California; will accept down payment, and balance can be paid on a percentage of work basis, to a reliable man who can furnish good references; state amount of down payment that can be made in reply to this ad. Box 628

HELP WANTED

Wanted: Experienced, reliable driller for general water well drilling, including hard and soft rock and screen work. Stewart Bros., Box 976, Schenectady, N. Y.

Responsible young men with some drilling experience, to learn to operate cable and rotary drilling equipment, or install and repair all types of deep well pumps, or operate machine shop, cutting tool joints and operate machine bit dresser; steady employment. D. E. Edwards, West Branch, Iowa.

Wanted: Experienced cable tool driller to work on Bucyrus-Erie drills; must be sober and dependable; steady work, good wages. C. D. Nolan, 1003 — 20th St., S.E., Cedar Rapids, Iowa.

EQUIPMENT WANTED

Want to buy 20-W or 22-W near West Coast. Box 629

Failing 1500 or equal rotary drill equipment to drill 4" to 6" holes to 800'. D. E. Edwards, West Branch, Iowa.

Wanted: Good used 22-W Bucyrus-Erie drilling machine with all tools; in or around Iowa. Andrew Kertels, Farley 3, Iowa.

The Bargain Counter Can Help You In Buying and Selling Used Rigs

New, low cost water system for small homes

A MONEY-MAKER FOR WELL DRILLERS!

It's going over big! Orders are coming in *fast* for this new Deming "75" Convertible Jet Water System! Low price plus high quality is the winning combination. Features of the new Deming "75" are fully explained in illustrated BULLETIN No. 4910. Send for your free copy *Now! Then get your orders in early!*

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THE DEMING COMPANY
512 Broadway, Salem, Ohio

Please rush free copy of BULLETIN No. 4910.

My name _____

Company _____

Address _____

Above: The Bucyrus-Erie 1-W, a recent addition to that company's line of water well drills, was being demonstrated at a training school for distributors held in the middle of October at the company's South Milwaukee plant and test farm. Three machines were set up to demonstrate the machine's ability to drill by the cable tool, rotary, and jetting and hollow rod methods. Watching the 1-W as a rotary are (l. to r.) R. W. Gordon, Bucyrus-Erie Co.; W. Snead, Beckwith Machinery Co., Pittsburgh, Pa.; R. Tyler, Wilson & Beemer Supply Co., Ames, Iowa; P. Mask, Hickory Well Supply Co., Inc., Hickory, N. C., and T. R. Hudson, Bucyrus-Erie Co.

The Driller

The monthly magazine for water well drillers

South Milwaukee, Wisconsin

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